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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,844	01/02/2001	Yong-jun Kim	Q62175	9284

7590

07/01/2002

SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
WASHINGTON, DC 20037-3202

EXAMINER

NORRIS, JEREMY C

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 07/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/751,844

Applicant(s)

KIM ET AL.

Examiner

Jeremy Norris

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 12-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I, claims 1-11 in Paper No. 6 is acknowledged.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as anticipated by US 4,899,439, granted to Potter et al. (hereafter Potter).
Potter discloses, referring to figure 1, a circuit board comprising: a dielectric substrate, a grounding surface (20) formed on at least one surface of the dielectric substrate, and transmission lines (14) formed on one surface of the dielectric substrate for transmitting electrical signals, wherein at least a portion of each of the transmission lines is isolated from an upper surface of the dielectric substrate to reduce an effective permittivity between the transmission lines and the grounding surface and reduce dielectric loss [claim 1], further comprising a plurality of supporters (16, 18) for supporting the transmission lines, between the dielectric substrate and each of the transmission lines in order to isolate the transmission lines a predetermined interval apart from the upper surface of the dielectric substrate [claim 2].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potter in view of US 6,115,262, granted to Brunner et al. (hereafter Brunner).

Potter discloses the claimed invention as described above except Potter does not specifically state that there is a pad installed at least one end of each of the transmission lines [claims 3, 4]. Brunner teaches installing a pad (24) at at least one end of each transmission line (12). Therefore, it would have been obvious, to one having ordinary skill in the art at the time of invention to install a pad at the end of each

transmission line in the invention of Potter, as taught by Brunner. The motivation for doing so would have been to allow for external connection to components.

Claims 5-7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potter in view of US 6,229,404, granted to Hatanaka (hereafter Hatanaka).

Regarding claims 5 and 6, Potter discloses the claimed invention as described above except Potter does not specifically state that there is a cap which covers the transmission lines, one end of the cap being grounded to the grounding surface [claims 5, 6]. However, Hatanaka teaches a cap (6) covering an entirety of a circuit board (including transmission lines), an end of the cap being grounded to the grounding surface of the circuit board (see col. 9, lines 35-40). Therefore, it would have been obvious, to one having ordinary skill in the art, at the time of invention, to attach a cap to the circuit board of the invention of Potter, as taught by Hatanaka. The motivation for doing so would have been to shield the circuitry from outside RF interference. Furthermore, since Hatanaka teaches the board and cap to be "hermetically sealed" (see col. 10, lines 20-35) it is clear that the inside of the cap is in a vacuum state [claims 7, 10].

Regarding claim 9, the invention of Potter as modified by the teachings of Hatanaka disclosed above except Potter in view of Hatanaka does not specifically state the grounding surface is formed on an opposite surface of the dielectric substrate, and a conducting electrode is installed, one end of which is connected to the cap and the other is grounded to the grounding surface through the dielectric substrate so that the

cap is grounded to the grounding surface. However, it would have been obvious, to one having ordinary skill in the art, at the time of invention, that the grounding surface could be located on either surface of the dielectric substrate. Indeed, Hatanaka discloses a grounding surface on the side of a dielectric substrate remote from the cap.

Furthermore, it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Potter in view of Hatanaka as applied to claims 5 and 6 above, and further in view of Brunner.

The invention of Potter as modified by the teachings of Hatanaka disclosed above except Potter in view of Hatanaka does not specifically state that there is a pad installed at least one end of each of the transmission line. Brunner teaches installing a pad (24) at at least one end of each transmission line (12). Therefore, it would have been obvious, to one having ordinary skill in the art at the time of invention to install a pad at the end of each transmission line in the invention of Potter, as taught by Brunner. The motivation for doing so would have been to allow for external connection to components.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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The following documents disclose transmission lines with portions elevated from a dielectric surface:

US 3,801,388	Aikiyama et al.,
US 4,000,054	Marcantonio,
US 4,141,055	Berrey et al.,

The following documents disclose capped circuit boards:

US 5,030,935	Williams et al.,
US 5,763,824	King et al.,
US 5,847,317	Phelps.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Norris whose telephone number is 703-306-5737. The examiner can normally be reached on Mon.-Th., 9AM - 6:30 PM and alt. Fri. 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7724 for regular communications and 703-305-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

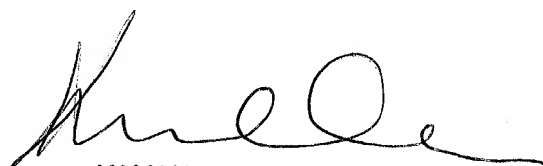
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JCSN

June 17, 2002

A handwritten signature in black ink, appearing to read 'Kamand Cuneo', written in a cursive style.

**KAMAND CUNEO
PRIMARY EXAMINER**